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On *Orsunius* II. Eight new species and additional records (Coleoptera: Staphylinidae: Paederinae: Medonina)

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A b s t r a c t : Eight species of the Oriental medonine genus *Orsunius* ASSING 2011 are described and illustrated: *O. spathulatus* nov.sp. (Philippines: Mindanao); *O. stimulans* nov.sp. (North Vietnam, Thailand); *O. latexciscus* nov.sp. (South Thailand); *O. gladiator* nov.sp. (Thailand); *O. flavovirgatus* nov.sp. (South Thailand); *O. granulatus* nov.sp. (Laos, Thailand, North Vietnam); *O. cuneus* nov.sp. (Laos); *O. heissi* nov.sp. (Malaysia: Kedah). Additional records of two previously named species are reported, among them the first records of *O. immsi* (BERNHAEUER 1914) from Laos and Thailand. The distributions of all the species of the genus are mapped. A new key to species and an updated catalogue are provided.

K e y w o r d s : Coleoptera, Staphylinidae, Paederinae, Medonina, *Orsunius*, Oriental region, taxonomy, new species, additional records, distribution maps, key to species, catalogue.

Introduction

The recently described paederine genus *Orsunius* ASSING 2011 of the subtribe Medonina previously comprised seven named species. The distribution of the genus is essentially Oriental, with four species recorded (also) from the south (Himalaya, Taiwan, Yunnan) of the East Palaearctic region sensu SMETANA (2004) (ASSING 2011).

The present contribution is based on new material that has been examined since the description of the genus. An examination of this material yielded eight additional species and records of two previously described species.

Material and methods

The material treated in this study is deposited in the following public institutions and private collection:

NHMB Naturhistorisches Museum Basel (M. Geiser, I. Zürcher)

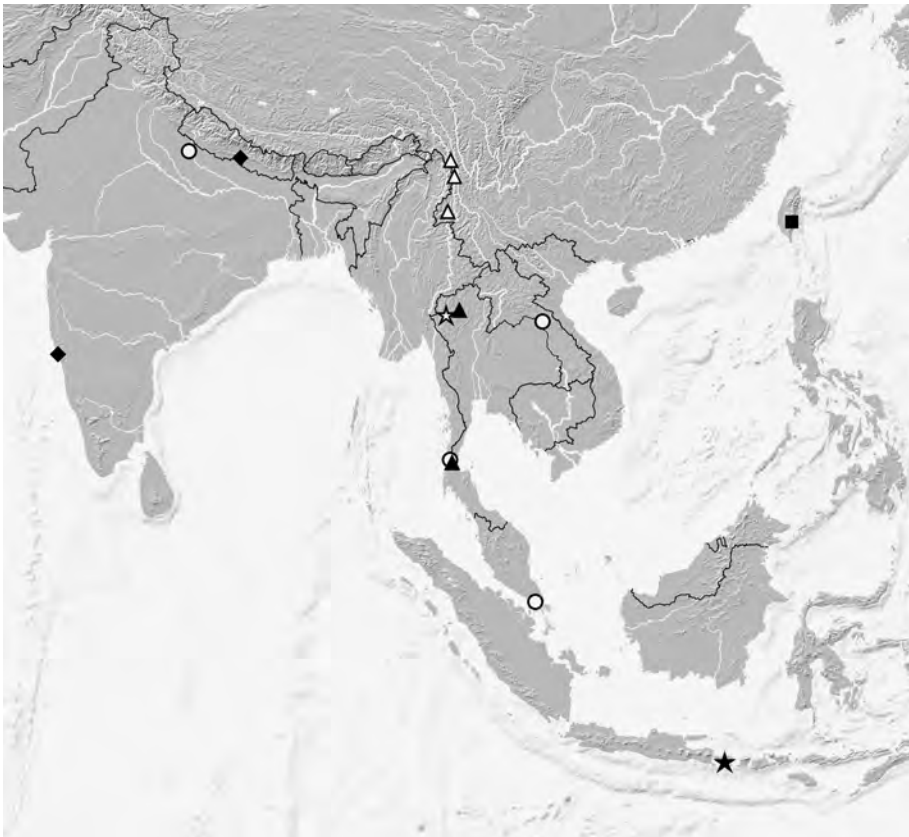
ZMUC Natural History Museum Denmark/University of Copenhagen Zoological Museum
(A. Solodovnikov)

cAss..... author's private collection

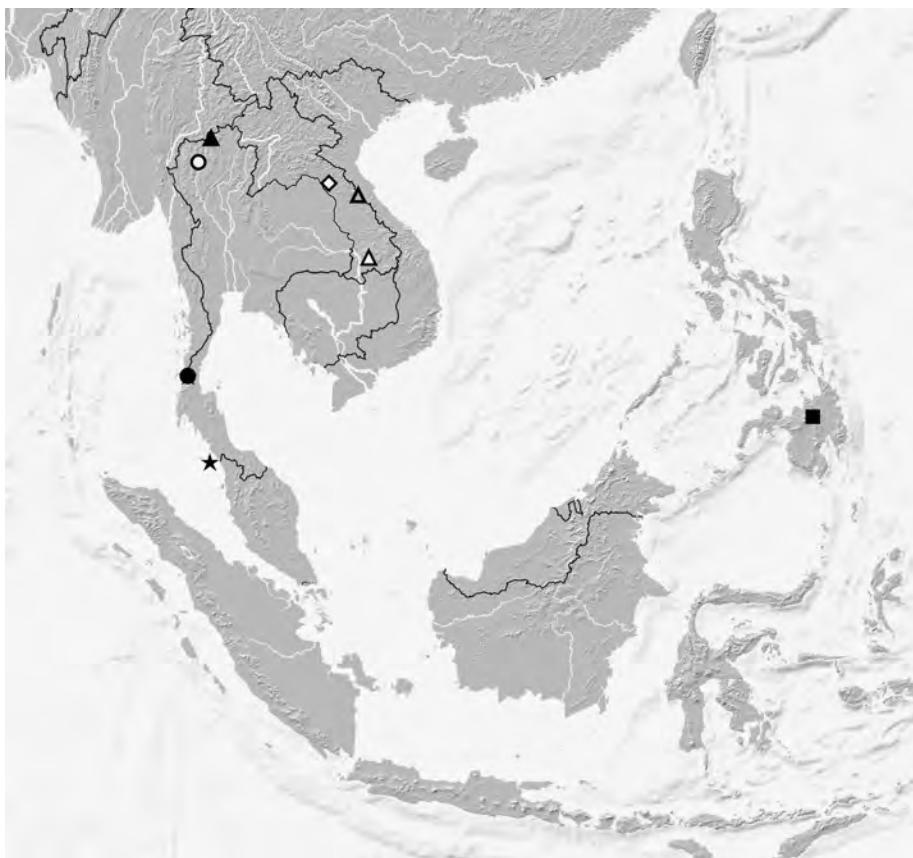
The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). A digital camera (Nikon Coolpix 995) was used for the photographs. The maps were created using MapCreator 2.0 (primap) software.

Body length was measured from the anterior margin of the mandibles (in resting position) to the abdominal apex, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra, and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The "parameral" side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

Species descriptions and additional records



Map 1: Distributions of *Orsunius immsi* (white circles), *O. parvexcisus* (black diamonds), *O. yunnanus* (white triangles), *O. pravus* (black triangles), *O. wunderlei* (white star), *O. excisus* (black square), and *O. prolongatus* (black star).



Map 2: Distributions of *Orsunius gladiator* (white and black circles), *O. latexciscus* (black circle), *O. flavovirgatus* (black circle), *O. heissi* (black star), *O. stimulans* (black and grey triangles), *O. granulosus* (white and grey triangles), *O. cuneatus* (white diamond), and *O. spathulatus* (black square).

Comment: Including the species newly described below, *Orsunius* now comprises fifteen named species. The known distribution of the genus is essentially Oriental; it ranges from the Himalaya and South India to Taiwan, Malaysia, Indonesia, and the Philippines (Maps 1-2).

Three of the new species (*O. granulosus*, *O. cuneatus*, *O. heissi*) clearly represent a monophylum distinguished from other *Orsunius* species by the distinctly granulose punctuation of the pronotum, the broadly and shallowly V-shaped median excision of the anterior margin of the labrum (narrowly U-shaped in other *Orsunius* species except *O. prolongatus*), the presence of four (rather than three) distinct teeth on the right mandible, and a different morphology of the aedeagus (ventral process relatively short, dorso-ventrally compressed, and of more or less triangular shape in ventral view). These differences may suggest that the three species actually represent a distinct genus, but this issue should be addressed only after more species have been studied. In view of the fact that the number of named species has more than doubled based on material composed of

relatively few specimens and from only a few localities, it appears highly likely that the true diversity of *Orsunius* is far greater than currently known.

***Orsunius immisi* (BERNHAUER 1914) (Map 1)**

Material examined: Laos: 2 exs., Khammouan province, Ban Khoun Ngeun, 18°07'N, 104°29'E, 200 m, 24.-29.IV.2001, leg. Pacholátko (NHMB, cAss). Thailand: 1 ♀, Ranong prov. Ranong: Hot Springs, 9°56'N, 98°40'E, 23.-25.II.1996, leg. Majer (NHMB).

Comment: This species was previously known only from North India and Malaysia (ASSING 2011). The above specimens represent the first records from Laos and Thailand. The currently known distribution is illustrated in Map 1.

***Orsunius pravus* ASSING 2011 (Map 1)**

Material examined: Thailand: 1 ♂, Chumphon province, Pha To env., 9°48'N, 98°47'E, 27.III.-14.IV.1996, leg. Majer (NHMB).

Comment: The original description of this species is based on a unique male from the northwest of Thailand (ASSING 2011); the above specimen was collected in southern Thailand (Map 1).

***Orsunius spathulatus* nov.sp. (Figs 1-6, Map 2)**

Type material: Holotype ♂: "Mindanao, Malaybay env., 6 Jan 1991, Bolm lgt 1200 m / Holotypus ♂ *Orsunius spathulatus* sp.n. det. V. Assing 2013" (NHMB).

Etymology: The specific epithet is an adjective derived from the Latin noun *spathula* (spattle) and refers to the shape of the ventral process of the aedeagus.

Description: Body length 3.3 mm; length of forebody 1.95 mm. Habitus as in Fig. 1. Coloration: head and pronotum reddish; elytra reddish-brown, with the posterior fourth yellowish and the humeral angles reddish; abdomen reddish-brown; legs yellowish; antennae reddish.

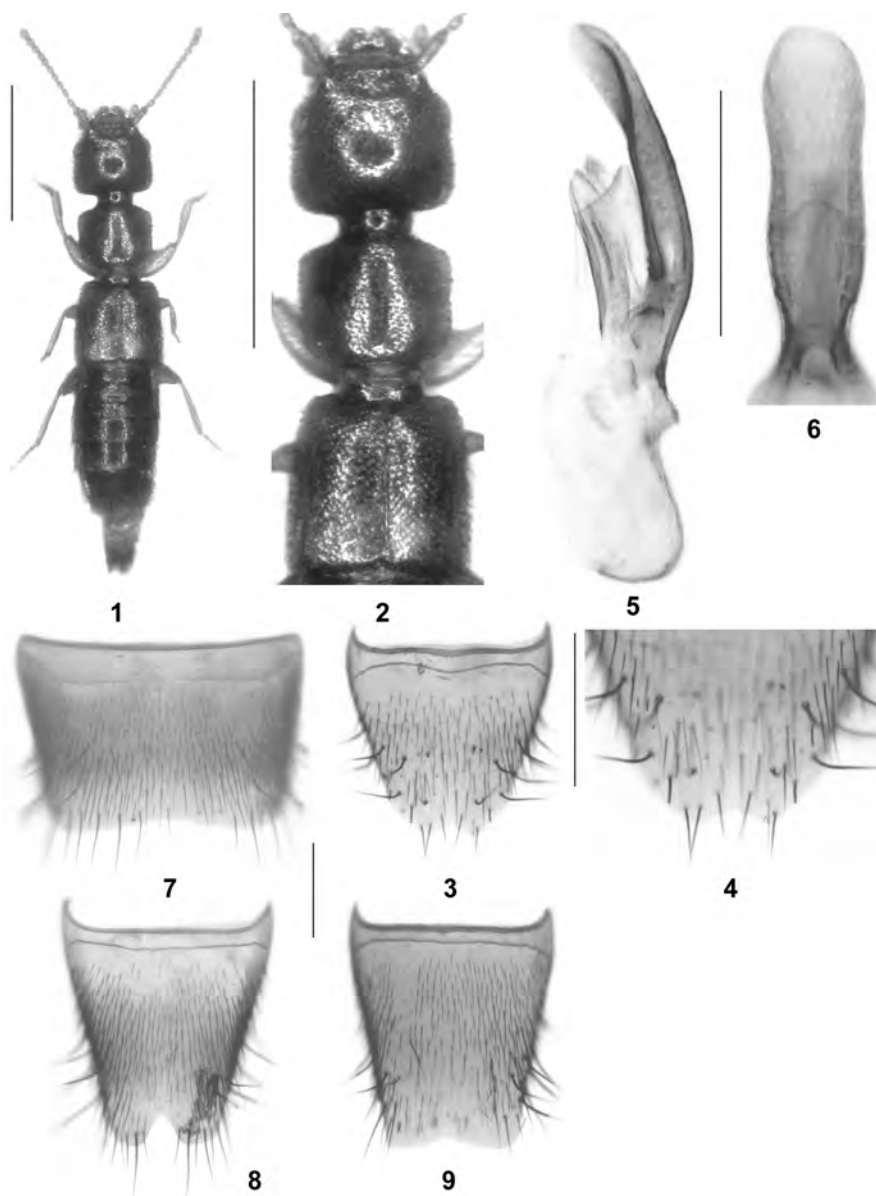
Head (Fig. 2) transverse, 1.12 times as broad as long, weakly dilated behind eyes, and with marked posterior angles; posterior margin weakly concave in the middle; punctuation dense and fine, very sparse in median dorsal portion; interstices without microsculpture. Eyes large, approximately 0.8 times as long as postocular portion in dorsal view. Antennae 0.9 mm long; antennomeres VIII-X transverse. Anterior margin of labrum with U-shaped excision in the middle.

Pronotum (Fig. 2) 1.15 times as wide as long and 0.95 times as broad as head; posterior angles rounded, weakly marked; punctuation fine and dense; midline without impunctate band; interstices without microsculpture.

Elytra (Fig. 2) 1.06 times as long as pronotum; punctuation dense, more distinct than that of pronotum; interstices without microsculpture. Hind wings present. Protarsomeres I-IV weakly dilated. Metatarsomere I longer than II, but shorter than the combined length of II and III.

Abdomen slightly narrower than elytra; punctuation fine and dense; interstices with distinct isodiametric microreticulation; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with weakly concave posterior margin; sternite VIII (Fig. 3) transverse, approximately 1.2 times as broad as long, and with shallow posterior excision (Fig. 4);



Figs 1-9: *Orsunius spathulatus* nov.sp. (1-6), *O. stimulans* nov.sp. (7-8), and *O. gladiator* nov.sp. (9): (1) habitus; (2) forebody; (3, 8, 9) male sternite VIII; (4) posterior portion of male sternite VIII; (5) aedeagus in lateral view; (6) ventral process in ventral view; (7) male sternite VII. Scale bars: 1-2: 1.0 mm; 3-9: 0.2 mm.

aedeagus (Figs 5-6) 0.45 mm long, ventral process long, weakly curved in lateral view, and somewhat spattle-shaped in ventral view.

Comparative notes: This species is distinguished from other *Orsunius* species (see ASSING 2011) particularly by the shape of the male sternite VIII and by the morphology of the aedeagus.

Distribution and natural history: The type locality is situated in the environs of Malaybalay (8°09'N, 125°08'E) in Mindanao, Philippines (Map 2), at an altitude of 1200 m.

***Orsunius stimulans* nov.sp.** (Figs 7-8, 10-13, Map 2)

Type material: Holotype ♂: "Vietnam-N, Quang Binh prov., 1 km N of Cha Lo, 400 m, Vietnam-Laos border area, 17°41'22"N, 105°45'45"E, L. Dembický leg., 11.-24.iv.2010 / Holotypus ♂ *Orsunius stimulans* sp.n. det. V. Assing 2013" (NHMB). Paratype ♀: "Thai 25.5.91, Fang 300 m, 19°55'N, 99°12'E, David Král lgt." (cAss).

Etymology: The specific epithet is the present participle of the Latin verb *stimulare* (to sting) and alludes to the acute apex of the ventral process of the aedeagus.

Description: Body length 3.8-4.1 mm; length of forebody 2.1-2.2 mm. Habitus as in Fig. 10. Body distinctly bicoloured: head blackish; pronotum pale-reddish; elytra yellowish, with the middle and the lateral margins more or less extensively infuscate; abdomen brown to dark-brown, with the apex more or less extensively yellowish; legs yellowish; antennae reddish.

Head (Fig. 11) transverse, approximately 1.15 times as broad as long, slightly tapering behind eyes, and with moderately marked posterior angles; posterior margin weakly concave in the middle; punctation very dense, moderately coarse, and umbilicate; interstices without microsculpture; dorsally with moderately long and laterally with very long black setae. Eyes very large and bulging, longer than postocular portion in dorsal view. Antennae 1.1-1.3 mm long and slender; preapical antennomeres very weakly transverse. Anterior margin of labrum with U-shaped excision in the middle.

Pronotum (Fig. 11) approximately 1.15 times as wide as long and nearly as broad as head; posterior angles rounded, weakly marked; lateral margins with numerous long black setae; punctation similar to that of head; midline with distinct impunctate band at least in posterior two-thirds; interstices without microsculpture.

Elytra (Fig. 11) nearly 1.15 times as long as pronotum; punctation dense, approximately as coarse as that of pronotum; interstices without microsculpture. Hind wings fully developed. Protarsomeres I-IV distinctly dilated in both sexes. Metatarsomere I long and slender, approximately as long as the combined length of II and III.

Abdomen narrower than elytra; punctation fine and very dense; posterior margin of tergite VII with palisade fringe.

♂: sternite VII (Fig. 7) with weakly concave posterior margin; sternite VIII (Fig. 8) weakly oblong and with V-shaped posterior excision; aedeagus (Figs 12-13) long in relation to body size, 0.75 mm long, ventral process long, slender, and apically very acute.

Comparative notes: Aside from the distinctive morphology of the aedeagus and the shape of the male sternite VIII, *O. stimulans* is characterized particularly by the coloration, the umbilicate punctation of the head and pronotum, and by the slender legs and antennae.

Distribution and natural history: The type locality is situated in

North Vietnam, near the border with Laos, at an altitude of 400 m. The paratype was collected in the extreme north of Thailand (Map 2), close to the border with Myanmar, at an altitude of 300 m.

***Orsunius gladiator* nov.sp.** (Figs 9, 14-17, Map 2)

Type material: Holotype ♂: "Thailand, 23.-25.ii.1996, Ranong prov. 9°56' 98°40', Ranong: Hot Springs, K. Majer leg. / Holotypus ♂ *Orsunius gladiator* sp.n. det. V. Assing 2013" (NHMB). Paratype ♀: "N-Thailand, Chiang Mai, Sandoeng [=Samoeng?], Flußufer, 350-550 m, Sand, Steine, 12.XI.1995, P. Wunderle" (cAss).

E t y m o l o g y : The specific epithet (Latin, noun in apposition) alludes to the sword-shaped ventral process of the aedeagus.

D e s c r i p t i o n : Body length 4.0-4.9 mm; length of forebody 2.2-2.4 mm. Habitus as in Fig. 14. Coloration: head dark-reddish; pronotum bright-reddish; elytra reddish-brown with the posterior two-fifths and the humeral angles reddish-yellow; abdomen brown, with the posterior portion of segment VII and all of segment VIII dark-yellowish; legs yellowish; antennae reddish.

Head (Fig. 15) strongly transverse, approximately 1.25 times as broad as long, broadest across eyes, weakly tapering behind eyes, and with sharply marked posterior angles; posterior margin very weakly concave in the middle; punctuation moderately dense and very coarse, median dorsal portion with a subcircular impunctate patch; interstices without microsculpture; lateral margins with long black setae (broken off in holotype). Eyes large and strongly bulging, somewhat longer than postocular portion in dorsal view. Antennae 1.2 mm long and slender; preapical antennomeres approximately as broad as long. Anterior margin of labrum with V-shaped excision in the middle.

Pronotum (Fig. 15) 1.15 times as wide as long and slightly broader than head; posterior angles rounded, weakly marked; lateral margins with long black setae (broken off in holotype); punctuation moderately dense and coarse, but slightly less so than that of head; midline with narrow impunctate band; interstices without microsculpture.

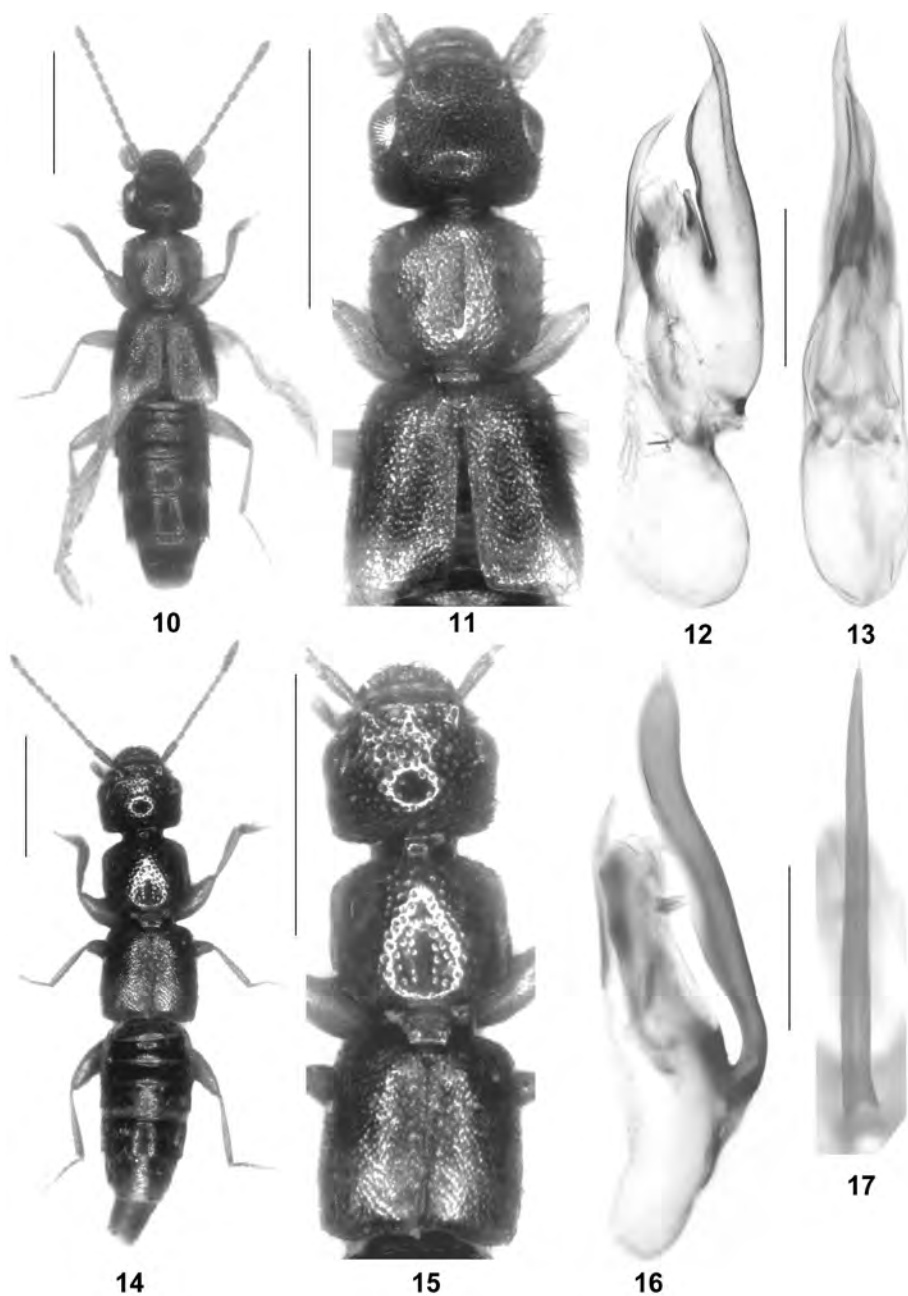
Elytra (Fig. 15) approximately as long as pronotum; punctuation dense and fine; interstices without microsculpture. Hind wings fully developed. Protarsomeres I-IV distinctly dilated. Metatarsomere I moderately slender, longer than II, but shorter than the combined length of II and III.

Abdomen slightly narrower than elytra; punctuation dense and extremely fine; interstices with distinct microreticulation; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with weakly concave posterior margin; sternite VIII (Fig. 9) approximately 1.05 times as long as broad and with barely noticeable, extremely shallow and broad posterior excision; aedeagus (Figs 16-17) 0.73 mm long, ventral process conspicuously long and slender, sword-shaped in lateral view.

C o m p a r a t i v e n o t e s : In size, coloration, and habitus, *O. gladiator* somewhat resembles *O. immsi*, from which it is distinguished by the distinctly coarser punctuation of the more transverse head, as well as by the completely different male sexual characters.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The species is known from two localities in northern and southern Thailand (Map 2). The slightly teneral paratype was collected on a river bank with sand and stones at an altitude of 350-550 m. The holotype was collected together with *O. latexcisus*, *O. immsi*, *O. flavovirgatus*, and an undescribed species.



Figs 10-17: *Orsunius stimulans* nov.sp. (10-13) and *O. gladiator* nov.sp. (14-17): (10, 14) habitus; (11, 15) forebody; (12, 16) aedeagus in lateral view; (13) aedeagus in ventral view; (17) ventral process in ventral view. Scale bars: 10-11, 14-15: 1.0 mm; 12-13, 16-17: 0.2 mm.

***Orsunius latexciscus* nov.sp.** (Figs 18-21, 33, Map 2)

Type material: Holotype ♂: "Thailand, 23.-25.ii.1996, Ranong prov. 9°56' 98°40', Ranong: Hot Springs, K. Majer leg. / Holotypus ♂ *Orsunius latexciscus* sp.n. det. V. Assing 2013" (NHMB). Paratype ♀: same data as holotype (cAss).

E t y m o l o g y : The specific epithet is an adjective composed of the Latin adjective *latus* (broad) and the past participle *excisus*. It refers to the broad posterior excision of the male sternite VIII.

D e s c r i p t i o n : Body length 3.4-3.6 mm; length of forebody 2.1 mm. Habitus as in Fig. 18. Coloration: forebody dark-brown, with the anterior margins and the humeral angles of the elytra yellowish; abdomen brown, with the posterior portion of segment VII and all of segment VIII dark-yellowish; legs yellowish; antennae reddish, with antennomere I infusate.

Head (Fig. 19) weakly transverse, approximately 1.05 times as broad as long and with moderately marked posterior angles; lateral margins behind eyes subparallel; posterior margin weakly concave in the middle; punctuation moderately dense and conspicuously coarse; interstices without microsculpture; lateral margins without long black setae. Eyes large, approximately as long as postocular portion in dorsal view. Antennae 1.1-1.2 mm long; antennomeres VII moderately, and VIII-X strongly transverse, more than 1.5 times as broad as long. Anterior margin of labrum with U-shaped excision in the middle.

Pronotum (Fig. 19) 1.10-1.15 times as wide as long and approximately as broad as head; posterior angles rounded, weakly marked; lateral margins without long black setae; punctuation moderately dense and distinct, but less coarse than that of head; midline with more or less pronounced impunctate band; interstices without microsculpture.

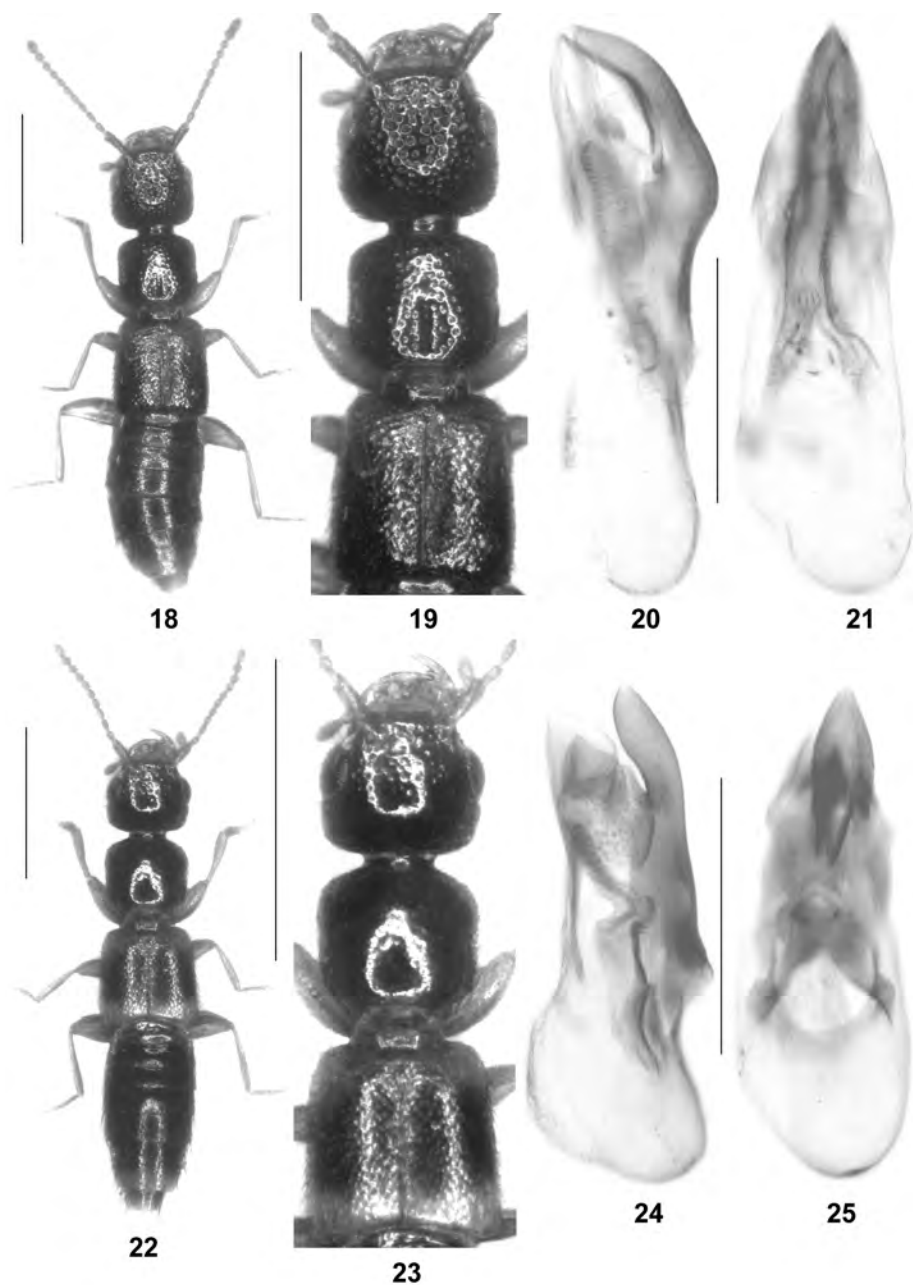
Elytra (Fig. 19) approximately 1.1 times as long as pronotum; punctuation dense, finer than that of pronotum; interstices without microsculpture. Hind wings fully developed. Protarsomeres I-IV very weakly dilated. Metatarsomere I moderately slender, longer than II, but shorter than the combined length of II and III.

Abdomen narrower than elytra; punctuation dense and extremely fine; interstices with distinct microreticulation; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with weakly concave posterior margin; sternite VIII (Fig. 33) approximately as long as broad and with shallow, broad posterior excision; aedeagus (Figs 20-21) small, 0.45 mm long, ventral process relatively short, distinctly curved in lateral view.

C o m p a r a t i v e n o t e s : This species is distinguished from other *Orsunius* species by the coloration, the conspicuously coarse punctuation of the head, the distinctly transverse antennomeres VIII-X, the broad and shallow posterior excision of the male sternite VIII, and by the distinctive morphology of the aedeagus.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The type locality is situated near Ranong in southern Thailand (Map 2). The specimens were collected together with *O. immsi*, *O. gladiator*, *O. flavovirgatus*, and an undescribed species (represented by one female).



Figs 18-25: *Orsunius latexcisus* nov.sp. (18-21) and *O. flavovirgatus* nov.sp. (22-25): (18, 22) habitus; (19, 23) forebody; (20, 24) aedeagus in lateral view; (21, 25) aedeagus in ventral view. Scale bars: 18-19, 22-23: 1.0 mm; 20-21, 24-25: 0.2 mm.

***Orsunius flavovirgatus* nov.sp.** (Figs 22-25, 34-35, Map 2)

Type material: Holotype ♂: "Thailand, 23.-25.ii.1996, Ranong prov. 9°56' 98°40', Ranong: Hot Springs, K. Majer leg. / Holotypus ♂ *Orsunius flavovirgatus* sp.n. det. V. Assing 2013" (NHMB). Paratypes: 4♂♂, 1♀: same data as holotype (NHMB, cAss).

E t y m o l o g y : The specific epithet is an adjective composed of the Latin adjectives flavus (yellow) and virgatus (striped). It alludes to the coloration of the elytra.

D e s c r i p t i o n : Body length 3.0-3.6 mm; length of forebody 1.8-2.1 mm. Habitus as in Fig. 22. Coloration: head and pronotum blackish-brown to blackish; elytra distinctly bicoloured, blackish-brown with the anterior margins, the humeral angles, and the posterior fourth bright yellowish; abdomen dark-brown to blackish-brown, with the posterior portions of segments VII and VIII yellowish; legs and antennae yellowish.

Head (Fig. 23) strongly transverse, 1.15-1.20 times as broad as long, broadest across eyes and with moderately marked posterior angles; lateral margins behind eyes subparallel; posterior margin not distinctly concave in the middle; punctuation moderately dense and coarse in anterior half, fine and sparse in posterior half of dorsal surface; interstices without microsculpture; lateral margins without long black setae. Eyes large and strongly bulging, distinctly longer than postocular portion in dorsal view. Antennae approximately 1.0 mm long; antennomeres VII-X transverse. Anterior margin of labrum with U-shaped excision in the middle.

Pronotum (Fig. 23) approximately 1.15 times as wide as long and 0.95 times as broad as head, noticeably tapering posteriad; posterior angles rounded, weakly marked; lateral margins without long black setae; punctuation very sparse and fine; midline with broad impunctate band; interstices without microsculpture.

Elytra (Fig. 23) approximately 1.05 times as long as pronotum; punctuation dense and fine; interstices without microsculpture. Hind wings fully developed. Protarsomeres I-IV distinctly dilated. Metatarsomere I moderately slender, longer than II, but somewhat shorter than the combined length of II and III.

Abdomen slightly narrower than elytra; punctuation dense and fine; interstices with distinct isodiametric microreticulation; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with weakly concave posterior margin; sternite VIII (Fig. 34) weakly oblong and with shallow, broadly V-shaped posterior excision (Fig. 35); aedeagus (Figs 24-25) small, 0.35 mm long, ventral process relatively short and stout.

Comparative notes: Aside from the male sexual characters, *O. flavovirgatus* is distinguished from other *Orsunius* species particularly by the coloration and by the distinctive punctuation of the head and pronotum.

Distribution and natural history: The type locality (Map 2) and other data are identical to those of *O. latexcisus*.

***Orsunius granulosus* nov.sp.** (Figs 26-32, Map 2)

Type material: Holotype ♂: "Laos: Champasak prov.: Bolaven Plt, Muang Paxong, Ban Hoyayteuy, Mt. Phu Din, 13-14.vi.2008; 1100 m, 15°03.171'N 106°17.397'E / A. Solodovnikov & J. Pedersen leg., Disturbed primary rainforest, sifted leaf litter; ZMUC collection / Holotypus ♂ *Orsunius granulosus* sp.n. det. V. Assing 2012" (ZMUC). Paratypes: 3♂♂, 3♀♀: same data as holotype (ZMUC, cAss); 4♂♂, 3♀♀: "Vietnam-N, Quang Binh prov., 1 km N of Cha Lo, 400 m, Vietnam-Laos border area, 17°41'22"N, 105°45'45"E, L. Dembický leg., 11.-24.iv.2010" (NHMB, cAss);

2♂♂: "THAILAND - river near Ban Pong Din, 32 km ENE Chiang Mai, 27.XI.2004, leg. W. Rossi" (cAss).

E t y m o l o g y : The specific epithet (Latin, adjective) refers to the granulose punctation of the pronotum.

D e s c r i p t i o n : Body length 3.7-4.2 mm; length of forebody 1.9-2.1 mm. Habitus as in Fig. 26. Coloration: body reddish to dark-brown, with the elytra sometimes slightly paler and the elytral postero-lateral angles weakly infusate; legs yellowish to yellowish-brown; antennae reddish.

Head (Fig. 27) of transversely rectangular shape, approximately 1.15 times as broad as long; posterior margin distinctly concave in the middle; punctation distinct and dense; interstices narrower than diameter of punctures and glossy, without microsculpture; sides with long dark-brown setae. Eyes large, on average approximately as long as postocular portion in dorsal view, often slightly shorter or longer. Antennae slender, 1.1-1.2 mm long; preapical antennomeres approximately as wide as long. Anterior margin of labrum with broadly V-shaped excision in the middle; left mandible with three, right mandible with four pronounced molar teeth.

Pronotum (Fig. 27) approximately 1.2 times as wide as long and 1.05 times as broad as head; posterior angles rounded, weakly marked; lateral and anterior margins with long dark setae; punctation very dense and distinctly, finely granulose, rendering the pronotum matt; with or without rudiment of an impunctate median band in posterior half.

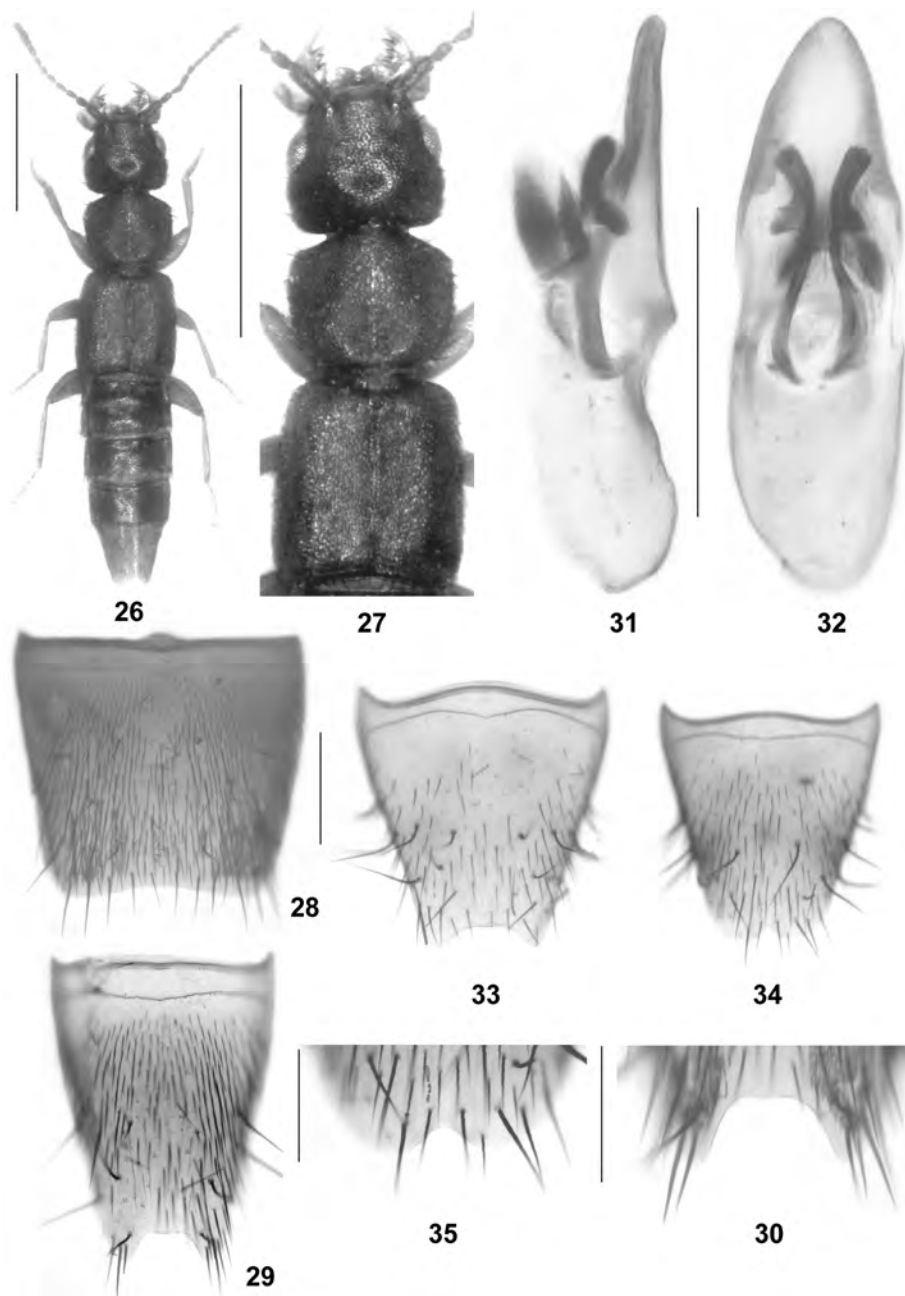
Elytra (Fig. 27) 1.10-1.15 times as long as pronotum; punctation very dense, fine, and somewhat asperate. Hind wings fully developed. Protarsomeres I-IV sexually dimorphic, more distinctly dilated in males than in females. Metatarsomere I longer than II and slightly shorter than the combined length of II and III.

Abdomen narrower than elytra; punctation extremely fine and dense, barely noticeable in the microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII (Fig. 28) with weakly concave posterior margin; sternite VIII (Fig. 29) oblong and with posterior excision of trapezoid shape (Fig. 30); aedeagus (Figs 31-32) small, approximately 0.35 mm long; internal sac with a pair of strongly sclerotized short and curved apical structures and with a pair of longer, less strongly sclerotized basal structures.

C o m p a r a t i v e n o t e s : This and the two following species are attributed to *Orsunius* with some hesitation. They share the habitus, the head shape, and other external characters with the species previously assigned to the genus, but are distinguished from them by the presence of four (rather than three) molar teeth on the right mandible, the broadly V-shaped median incision of the anterior margin of the labrum, the conspicuous granulose punctation of the pronotum, and by a rather different morphology of the aedeagus. From the closely related *O. cuneatus* and *O. heissi*, *O. granulosus* is best distinguished by the trapezoid posterior excision of the male sternite VII and by the morphology of the aedeagus.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The species is known from three localities in southern Laos, North Thailand, and North Vietnam (Map 2). The partly teneral specimens from Laos were sifted from leaf litter in a degraded primary forest at an altitude of 1100 m.



Figs 26-35: *Orsunius granulatus* nov.sp. (26-32), *O. latexcicus* nov.sp. (33) and *O. flavovirgatus* nov.sp. (34-35): (26) habitus; (27) forebody; (28) male sternite VII; (29, 33, 34) male sternite VIII; (30, 35) posterior portion of male sternite VIII; (31) aedeagus in lateral view; (32) aedeagus in ventral view. Scale bars: 26-27: 1.0 mm; 28-29, 31-34: 0.2 mm; 30, 35: 0.1 mm.

***Orsunius cuneatus* nov.sp.** (Figs 36-39, 44-46, Map 2)

Type material: Holotype ♂: "Laos-C, Khammouan pr., Ban Khoun Ngeun, ~200 m, 18°07'N 104°29'E, Pacholátka leg., 24.-29.iv.2001 / Holotypus ♂ *Orsunius cuneatus* sp.n. det. V. Assing 2013" (NHMB). Paratypes: 6♂♂, 12♀♀: same data as holotype (NHMB, cAss).

Etymology: The specific epithet (Latin, adjective: wedge-shaped) refers to the shape of the ventral process of the aedeagus in ventral view.

Description: External characters (Figs 36-37) as in *O. granulosus*.

♂: sternite VII (Fig. 44) of similar shape as in *O. granulosus*; sternite VIII (Fig. 45) distinctly oblong and with distinct posterior excision of nearly semi-circular shape (Fig. 46); aedeagus (Figs 38-39) small, approximately 0.35 mm long; ventral process of acutely triangular shape in ventral view; internal sac with a pair of distinctly sclerotized apical structures and with a pair of short, weakly sclerotized basal structures.

Comparative notes: As can be inferred from the practically identical external characters, including the similarly derived punctuation of the forebody, as well as from the similarly derived morphology of the aedeagus, *O. cuneatus* is closely related to *O. granulosus*, from which it differs by the shape of the posterior excision of the male sternite VIII, by the acutely triangular shape of the ventral process of the aedeagus, and by the shapes of the internal structures of the aedeagus.

Distribution and natural history: The type locality is situated in Central Laos (Map 2) at an altitude of approximately 200 m.

***Orsunius heissi* nov.sp.** (Figs 40-43, 47-48, Map 2)

Type material: Holotype ♂: "Malaysia Kedah, Pulau Langkawi W, Talaga Tujuh env., 16.IV.2006, E. Heiss / Holotypus ♂ *Orsunius heissi* sp.n. det. V. Assing 2013" (cAss). Paratype ♂: same data as holotype (cAss).

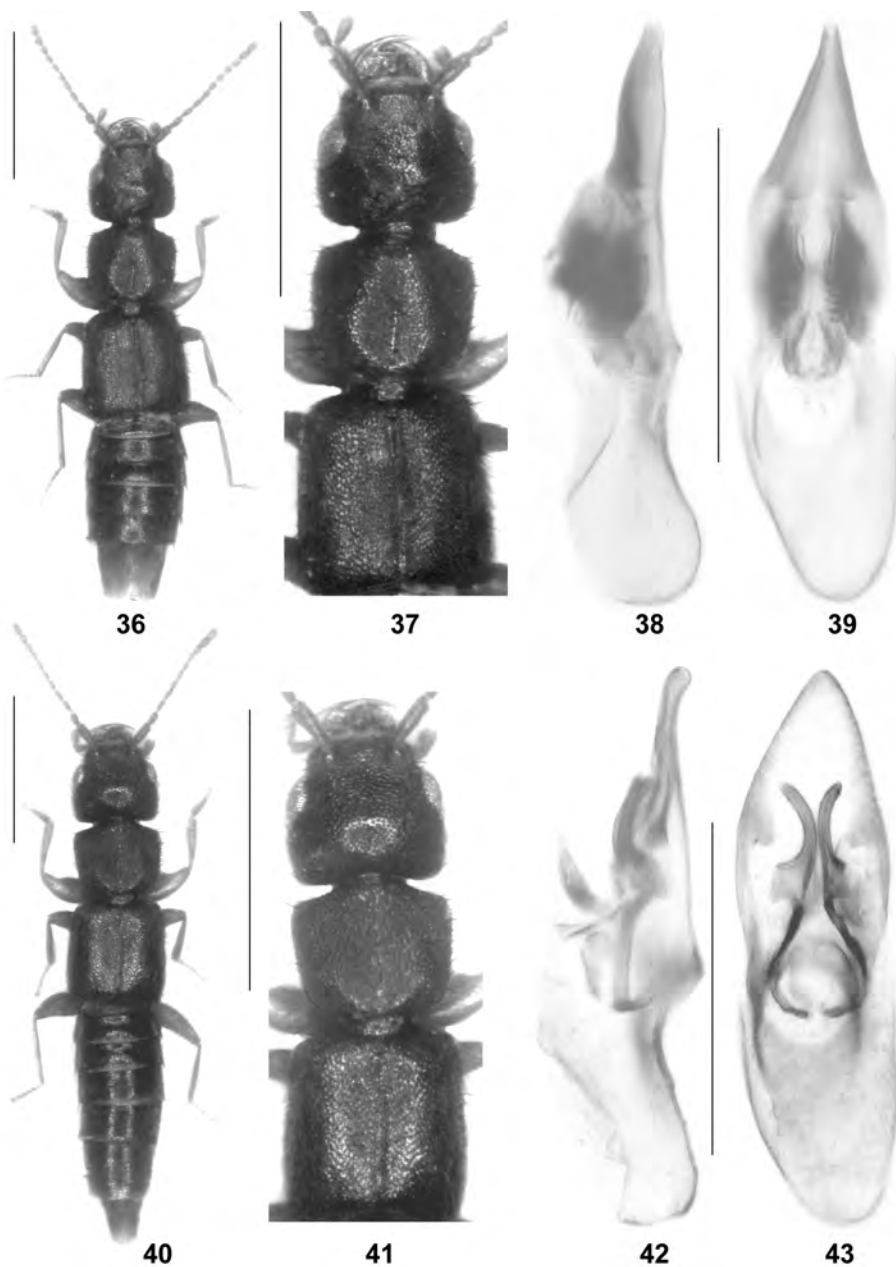
Etymology: This species is dedicated to Ernst Heiss, distinguished Austrian specialist of Heteroptera, who collected the type specimens.

Description: Body length 3.5-3.6 mm; length of forebody 1.8-2.0 mm. Habitus as in Fig. 40. Coloration: head reddish-brown to dark-brown; pronotum reddish-brown; elytra reddish, with the postero-lateral portion more or less distinctly and more or less extensively darker; abdomen reddish to reddish-brown; legs yellowish; antennae reddish.

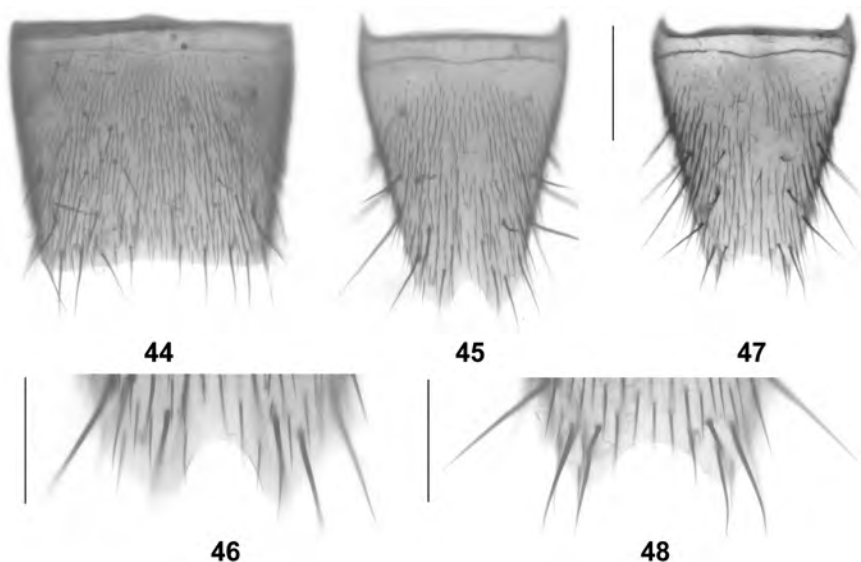
Head (Fig. 41) approximately 1.15 times as broad as long; posterior margin distinctly concave in the middle; punctuation distinct and dense; interstices narrower than diameter of punctures and glossy, without microsculpture; sides with long dark-brown setae. Eyes large, approximately as long as postocular portion in dorsal view. Antennae slender, approximately 1.0 mm long; preapical antennomeres approximately as wide as long. Anterior margin of labrum with broadly V-shaped excision in the middle; left mandible with three, right mandible with four pronounced molar teeth.

Pronotum (Fig. 41) 1.6-1.8 times as wide as long and 1.00-1.05 times as broad as head; posterior angles rounded, weakly marked; lateral and anterior margins with long dark setae; punctuation very dense and distinctly granulate, rendering the pronotum matt; with or without rudiment of very narrow impunctate median band.

Elytra (Fig. 41) 1.10-1.15 times as long as pronotum; punctuation very dense, fine, and somewhat asperate. Hind wings fully developed. Protarsomeres I-IV distinctly dilated. Metatarsomere I longer than II and slightly shorter than the combined length of II and III.



Figs 36-43: *Orsunius cuneatus* nov.sp. (36-39) and *O. heissi* nov.sp. (40-43): (36, 40) habitus; (37, 41) forebody; (38, 42) aedeagus in lateral view; (39, 43) aedeagus in ventral view. Scale bars: 36-37, 40-41: 1.0 mm; 38-39, 42-43: 0.2 mm.



Figs 44-48: *Orsunius cuneatus* nov.sp. (44-46) and *O. heissi* nov.sp. (47-48): (44) male sternite VII; (45, 47) male sternite VIII; (46, 48) posterior portion of male sternite VIII. Scale bars: 44-45, 47: 0.2 mm; 46, 48: 0.1 mm.

Abdomen narrower than elytra; punctation extremely fine and dense, barely noticeable in the microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with weakly concave posterior margin; sternite VIII (Fig. 47) oblong and with relatively broad posterior excision of shallowly semi-circular shape (Fig. 48); aedeagus (Figs 42-43) small, 0.33 mm long; internal sac with a pair of broad-based curved apical structures and with a pair of slender basal structures.

Comparative notes: In addition to the slightly more distinct punctation of the head and the more densely and coarsely granulose punctation of the pronotum, *O. heissi* differs from the evidently closely related *O. granulosus* and *O. cuneatus* by the shape of the posterior excision of the male sternite VIII and by the morphology of the aedeagus (shapes of the ventral process and of the internal structures).

Distribution and natural history: The type locality is situated on Pulau Langkawi Island, Kedah, Malaysia (Map 2). Additional data are not available.

Updated key to species

- 1 Pronotum with dense, finely granulose punctation, matt (Figs 27, 37, 41). Median excision of anterior margin of labrum broadly V-shaped. The *O. granulosus* group2
- Punctuation of pronotum not granulose, less dense. Median excision of anterior margin of labrum in most species deeper, narrower, and U-shaped4
- 2 Aedeagus with apically very acute ventral process in ventral view; sclerotized internal structures not sickle-shaped in ventral view (Figs 38-39). Posterior excision of male sternite VIII small and semi-circular (Figs 45-46). Laos (Map 2).....*O. cuneatus* nov.sp.

- Apex of ventral process of aedeagus less acute in ventral view; sclerotized internal structures sickle-shaped in ventral view. Posterior excision of male sternite VIII larger, either of trapezoid shape or broadly semi-circular3
- 3 Sclerotized internal structures of the aedeagus broad-based and apically slender (Figs 42-43). Posterior excision of male sternite VIII broadly semi-circular (Figs 47-48). Malaysia: Kedah (Map 2)..... *O. heissi* nov.sp.
- Sclerotized internal structures of the aedeagus of different shape, not distinctly broad-based (Figs 31-32). Posterior excision of male sternite VIII trapezoid (Figs 29-30). Laos, Thailand, North Vietnam (Map 2) *O. granulosus* nov.sp.
- 4 Protarsomeres I-IV not, or only weakly, dilated5
- Protarsomeres I-IV distinctly dilated7
- 5 Head with conspicuously coarse and dense punctation (Fig. 19). Male sternite VIII with broad and shallow posterior excision (Fig. 33). Aedeagus as in Figs 20-21. Thailand (Map 2) *O. latexcisus* nov.sp.
- Head with finer punctation. Male sexual characters different6
- 6 Eyes shorter than postocular region in dorsal view (Fig. 2). Head with uniformly fine punctation (Fig. 2). Male sternite VIII with very shallow posterior excision (Figs 3-4). Aedeagus as in Figs 5-6. Phippines: Mindanao (Map 2) *O. spatulatus* nov.sp.
- Eyes approximately as long as postocular region in dorsal view (ASSING 2011: figure 41). Head with double punctation, i.e., with micropunctation and with interspersed somewhat larger punctures (ASSING 2011: figure 42). Male sternite VIII as in ASSING (2011: figure 45). Aedeagus as in ASSING (2011: figures 47-49). India, Nepal (Map 1) *O. parvexcisus* ASSING
- 7 Head with conspicuously dense punctation everywhere, without shiny patch in median or posterior dorsal portion (Fig. 11; ASSING 2011: figures 20-21)).....8
- Head with sparse punctation, or densely punctate with a shiny (impunctate or less densely punctate) patch in median or posterior dorsal portion.....9
- 8 Head dark-brown, distinctly darker than the reddish pronotum; elytra more or less distinctly bicoloured (Fig. 11). Male sternite VIII with rather narrow, nearly V-shaped posterior excision (Fig. 8). Aedeagus as in Figs 12-13. North Vietnam, Thailand (Map 2) *O. stimulans* nov.sp.
- Head reddish, or of similar coloration as pronotum; elytra reddish, not distinctly bicoloured (ASSING 2011: figure 20). Male sternite VIII broadly V-shaped (ASSING 2011: figure 24). Aedeagus as illustrated in ASSING (2011: figures 25-26). Taiwan (Map 1)..... *O. excisus* ASSING
- 9 Anterior and lateral dorsal portions of head with dense and relatively coarse punctation, with the interstices distinctly narrower than the diameter of the punctures. ...10
- Lateral and anterior dorsal portion with sparser and/or finer punctation.....12
- 10 Punctuation of head and pronotum slightly less dense (Fig. 15). Body slightly smaller and more slender (Fig. 14). Male sternite VIII with very broadly and shallowly concave posterior margin, without distinct posterior excision (Fig. 9). Aedeagus as in Figs 16-17. Thailand (Map 2) *O. gladiator* nov.sp.
- Punctuation of head and pronotum somewhat denser (Assing 2011: figures 2-3, 9, 16). Body somewhat larger and more robust (Assing 2011: figures 1, 15). Male sexual characters different.....11
- 11 Head and pronotum reddish to dark-brown; elytra dark-brown, with the anterior margins, the suture, and the posterior margins reddish, rarely uniformly reddish; abdomen reddish to reddish-brown, with the middle of tergite VII infusate. Male sternite VIII as in ASSING (2011: figure 17). Aedeagus as in ASSING (2011: figures 18-19). China: Yunnan (Map 1) *O. yunnanus* ASSING
- Head and pronotum reddish; elytra reddish-yellow to reddish, with the anterior half often slightly and diffusely darker; abdomen reddish to dark-reddish, tergite VII not infusate. Male sternite VIII as in ASSING (2011: figure 14). Aedeagus as in ASSING (2011: figures 10-11). Thailand (Map 1)..... *O. wunderlei* ASSING

- 12 Head, pronotum, and abdomen dark-brown; elytra distinctly bicoloured, with dark-brown middle and with yellowish anterior and posterior margins (Figs 22-23). Male sternite VIII with small and shallow posterior excision (Figs 34-35). Aedeagus as in Figs 24-25. Thailand (Map 2) ***O. flavovirgatus*** nov.sp.
- Body, except for the sometimes bicoloured elytra, reddish. Male sexual characters different.....13
13. Pronotum small in relation to head (ASSING 2011: figure 28), at most as broad as head. Punctuation of head and pronotum very fine (ASSING 2011: figures 29, 35). Gular sutures very narrowly separated (ASSING 2011: figure 34). Male sternite VIII with very shallow posterior excision (ASSING 2011: figure 39). Aedeagus as in ASSING (2011: figures 36-37). North India, Malaysia, Thailand, Laos (Map 1) ***O. immsi*** (BERNHAUER)
- Pronotum larger in relation to head. Punctuation of head and pronotum coarser. Gular sutures more broadly separated. Male primary and secondary sexual characters different..... 14
- 14 Eyes larger, approximately as long as postocular region of head in dorsal view. Protarsomeres I-IV moderately dilated. Male sternite VIII less oblong and posteriorly with pubescence (ASSING 2011: figure 52). Aedeagus as in ASSING (2011: figures 55-56). Thailand (Map 1) ***O. pravus*** ASSING
- Eyes smaller, distinctly shorter than postocular region in dorsal view. Protarsomeres I-IV strongly dilated. Male sternite VIII more oblong and posteriorly without pubescence (ASSING 2011: figure 66). Ventral process of aedeagus of completely different shape, not distinctly asymmetric in dorsal view (ASSING 2011: figures 67-69); internal sac with distinctly sclerotized apical structures of characteristic shape. Indonesia: Bali (Map 1) ***O. prolongatus*** ASSING

Updated catalogue of the species of *Orsunius*

species	distribution
<i>cuneatus</i> nov.sp.	Laos
<i>excisus</i> ASSING 2011	Southeast Taiwan
<i>flavovirgatus</i> nov.sp.	South Thailand
<i>gladiator</i> nov.sp.	Thailand
<i>granulosus</i> nov.sp.	Laos; Thailand; North Vietnam
<i>heissi</i> nov.sp.	Malaysia: Kedah
<i>immsi</i> (BERNHAUER 1914) = <i>rubicundus</i> (CAMERON 1918)	North India; Laos; Thailand; Malaysia
<i>latexcisus</i> nov.sp.	South Thailand
<i>parvexcisus</i> ASSING 2011	Southwest India; Nepal
<i>pravus</i> ASSING 2011	Thailand
<i>prolongatus</i> ASSING 2011	Indonesia: Bali
<i>spathulatus</i> nov.sp.	Philippines: Mindanao
<i>stimulans</i> nov.sp.	North Vietnam; Thailand
<i>wunderlei</i> ASSING 2011	North Thailand
<i>yunnanus</i> ASSING 2011	China: Yunnan

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Zusammenfassung

Acht Arten der in der Orientalis verbreiteten Gattung *Orsunius* ASSING 2011 aus der Subtribus Medonina werden beschrieben und abgebildet: *O. spathulatus* nov.sp. (Philippinen: Mindanao); *O. stimulans* nov.sp. (Nordvietnam, Thailand); *O. latexciscus* nov.sp. (Thailand); *O. gladiator* nov.sp. (Thailand); *O. flavovirgatus* nov.sp. (Thailand); *O. granulosus* nov.sp. (Laos, Thailand, Nordvietnam), *O. cuneus* nov.sp. (Laos); *O. heissi* nov.sp. (Malaysia: Kedah). Weitere Nachweise von zwei beschriebenen Arten werden gemeldet, darunter Erstnachweise von *O. immsi* (BERNHAEUER 1914) aus Laos und Thailand. Die derzeit bekannte Verbreitung aller Arten wird anhand von Karten illustriert. Eine neue Bestimmungstabelle und ein aktualisierter Katalog der *Orsunius*-Arten werden erstellt.

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